

SPECIFICATION

Please amend Page 8, Line 7, of the Specification:

compositions, if desired. These additives can include at least one property modifier such as fumed silica, silica and gel, for example.

EXAMPLE 1

A preferred non-linear device of this invention is a metal-insulator-metal (MIM) diode. A MIM diode was produced as follows: First, tantalum oxide was produced by taking 1 g of tantalum powder (<2micron, Alfa Aesar) was mixed with 1 cc water in a ceramic bowl. The mixture was placed in an oven ~~in an oven~~ at 150°C for 20 minutes. The mixture was then remixed and placed back in the oven for an additional 15 minutes. Second, a dielectric binder was produced by dissolving 1.0 g of epoxy (0.5 g part A and 0.5 gm part B, Proxy Epoxy Craft, 2 part epoxy) in 5 ml methyl ethyl ketone (MEK). To the epoxy MEK solution was added 1 g of carbon powder (Glassy carbon spherical powder, 10-20 micron, type 1, Alfa-Aesar). Third, MIM composition was then produced by adding 0.5 g of the tantalum oxide powder to the dielectric binder.

The MIM composition was tested by coating the composition on copper foil to a nominal wet thickness of 5 mil. The composition was dried in an oven set at 150°C for 5 minutes. The resulting film was of good quality. The coated foil was then tested by attaching two terminals. One terminal is connected to the top part of the film and the other terminal is connected to the copper foil. These terminals were then used to connect the device under test to a curve tracer. This curve tracer gave the current versus voltage characteristics needed to see if the device was in fact a diode. If the MIM device under test has current and voltage relationship comparable to a diode then further testing is done. The diode is then tested for the series resistance. If the resistance is under 500 Ω then an impedance test over a range of frequencies is administered. Typical frequency values are currently in the range of 20 MHz to 120 MHz. A signal generator is then used to create the frequency of choice and the transmitted signal and the rectified signal are observed on an oscilloscope. The rectified signal is created by passing the generated signal through the MIM diode. This test verifies that the MIM diode has rectification properties, as seen from the measured IV curve. The MIM composition of this example is useful in antenna sensors of the disclosed invention.